6.3.7 Fine Screen Local Control Panel

Each fine screen has a local control panel. The primary control of the screen is through the PLC located in this panel. The screen can be operated directly from the panel or control can be sent to SCADA.

Panel Control Switches and Pushbuttons

The control interface to the screen is through switches on the front of the panel. These provide for manual operation of the screen from the panel or sending control to SCADA.

SCREEN HAND/OFF/REMOTE Switch

The HAND/OFF/REMOTE switch controls the screen operation. In HAND, the screen will run continuously. In OFF, the screen is off. In REMOTE, the screen is controlled by the screen's PLC. The screen will run when one of the following conditions occurs:

- High differential level setpoint is exceeded. Screen runs at low speed.
- Upstream high level setpoint is exceeded. Screen runs at high speed.
- Upstream high level alarm setpoint is exceeded. Screen runs at high speed.
- Backup timer times out before conditions 1, 2, and 3 initiates a Screen start.
- Level transmitter fails. Screen runs at high speed.

Spray Wash ON/OFF/AUTO Switch

The ON/OFF/AUTO switch control the screen sprays. In ON the spray wash (Screen spray wash and sparge) and Main Sparge control valves are open continuously. In OFF the Spray wash (Screen spray wash and sparge) control valves are closed. In AUTO the Spray wash (Screen spray wash and sparge) and Main Sparge control valves are open when the Screen is running. The Main Sparge control valve is open when either Screen 1 or Screen 2 is running.

Reset Button

Press the pushbutton to reset the PLC control logic after a fail(s) conditionhas been cleared.

Emergency Stop Button

Stops Screen and spray wash operation when pushbutton is pressed. To restart the Screen and spray wash, the pushbutton must be pulled out (maintained type) and the RESET pushbutton pressed to reset the PLC logic.

Screen Reverse Jog Switch

Screen HAND-OFF-REMOTE switch must be in HAND before the pushbutton is pressed. The Screen runs in reverse as long as the pushbutton is pressed. The Screen should not be run in reverse for more than 3 seconds.

Panel Touchscreen Interface

The Panel Touchscreen Interface provides the user/operator with a method to view and maintain the following machine operational status and parameters:

- Visual displays of Fail and Operational messages.

- Set operational parameters: real time and date settings; level start and stop setpoints; and runtimers.
- Monitor operational status of the System: run times; jams; motor overloads; and motor over-temps (over-temperatures).

When power is applied to the Controller, the initial (default) screen that appears is "Equipment Status". From this screen, the operator can access directly these screens: "Setup", "Alarm List", "Historical Alarms", "Analog Inputs", and "Statistical Counters". The main screen is shown on ***Figure 6.3.7-1***.

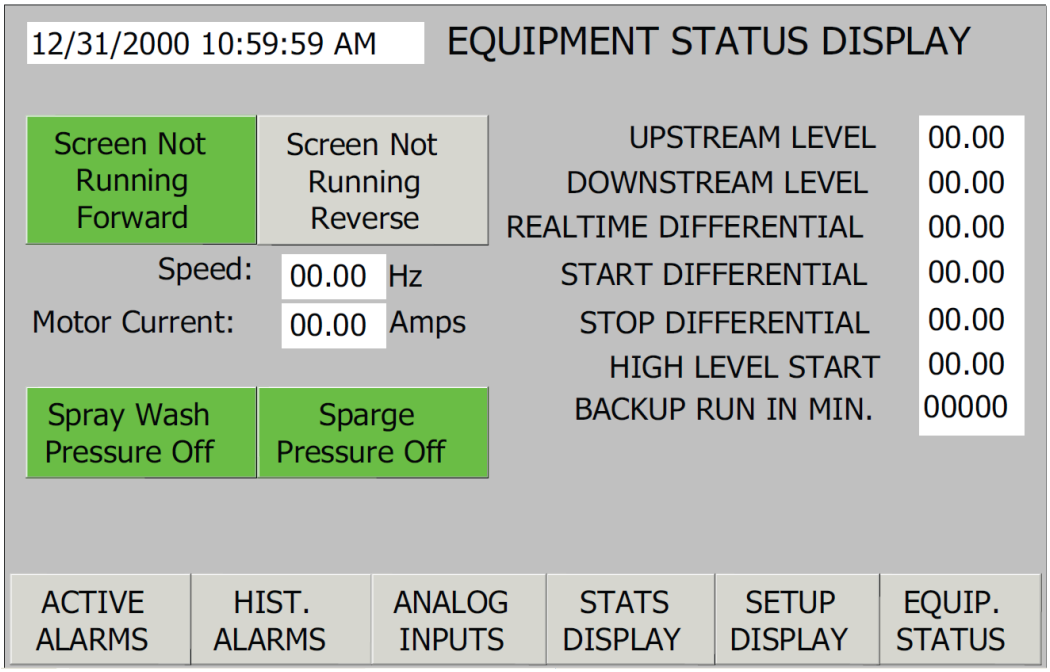

Figure 6.3.7-1 – Fine Panel Equipment Main Screen

Active Alarms Screen

The "Active Alarms" screen will automatically appear when a fail condition occurs. The alarm fault includes a date and time stamp. The active alarm screen is shown on ***Figure 6.3.7-2***.

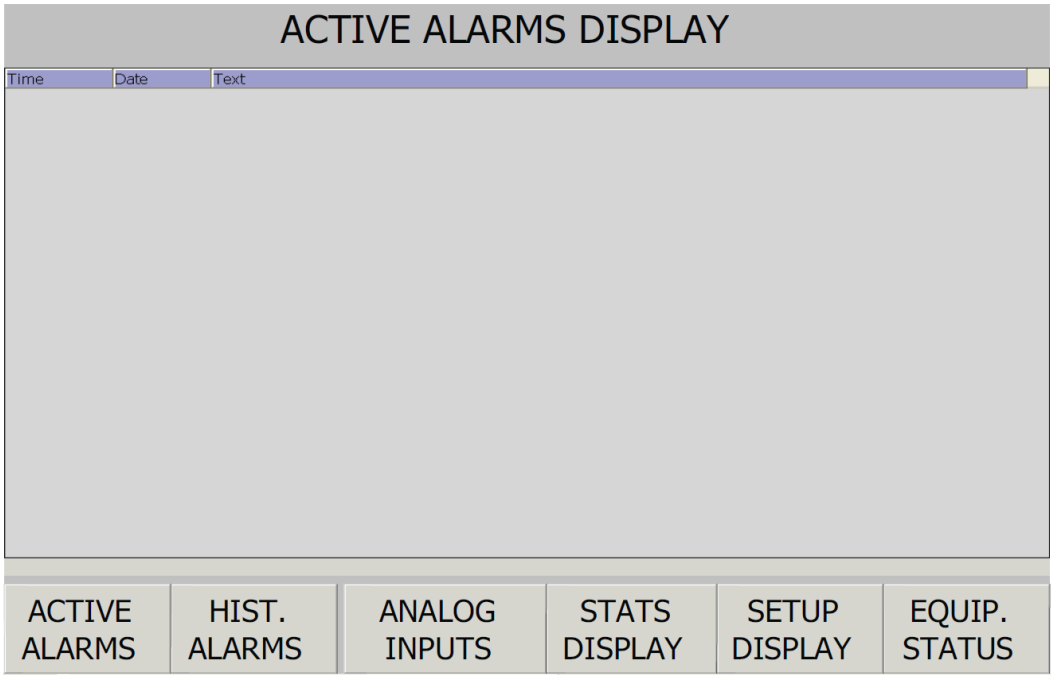

Figure 6.3.7-2 – Fine Panel Active Alarms Screen

Historical Alarm Display Screen

The "Historical Alarms" screen lists all the faults that occurred and includes the date and time stamp of the alarm. Active alarms are displayed with flashing messages and the non-flashing messages are historical alarms. Alarm messages that will appear are: Screen Jammed, Screen Motor Overload, Screen Motor Over-temp, Screen VFD Not Ready, Losing Screen Running Feedback Signal, Channel High Level Alarm, Channel High Differential Level, Channel Upstream Level Sensor Failed: analog input out of range, Channel Downstream Level Sensor Failed: analog input out of range, Screen Spray Wash Fail, Screen Surge Water Fail, Screen safety cover open, UPS On Battery, UPS Low Battery, SCADA Communications Lost – Control, Reverts to Local, Phase Monitor Tripped and Emergency Stop Activated. Each of these alarms is discussed in the alarm section of this manual. The historical alarm screen is shown on ***Figure 6.3.7-3***.

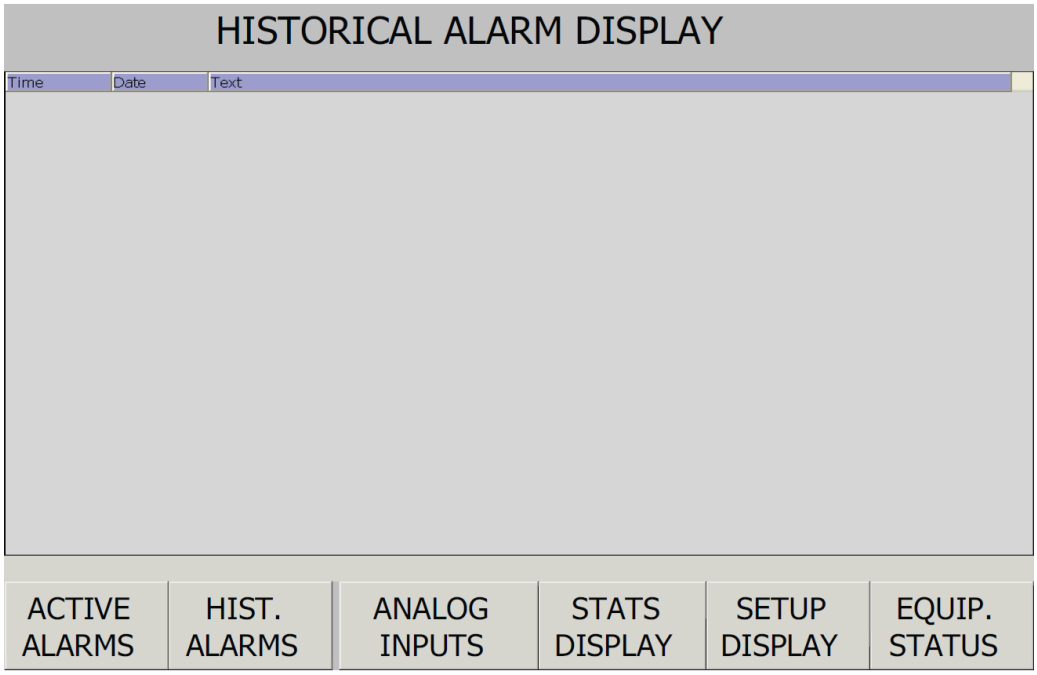

Figure 6.3.7-3 – Fine Panel Equipment Historical Alarm Display

Analog Inputs Display Screen

The analog input values to the PLC from the level transducers, the VFD, and the Screen current transducer are viewed on the "Analog Inputs" screen. The flow diagram is shown on **Figure 6.3.7-4**.

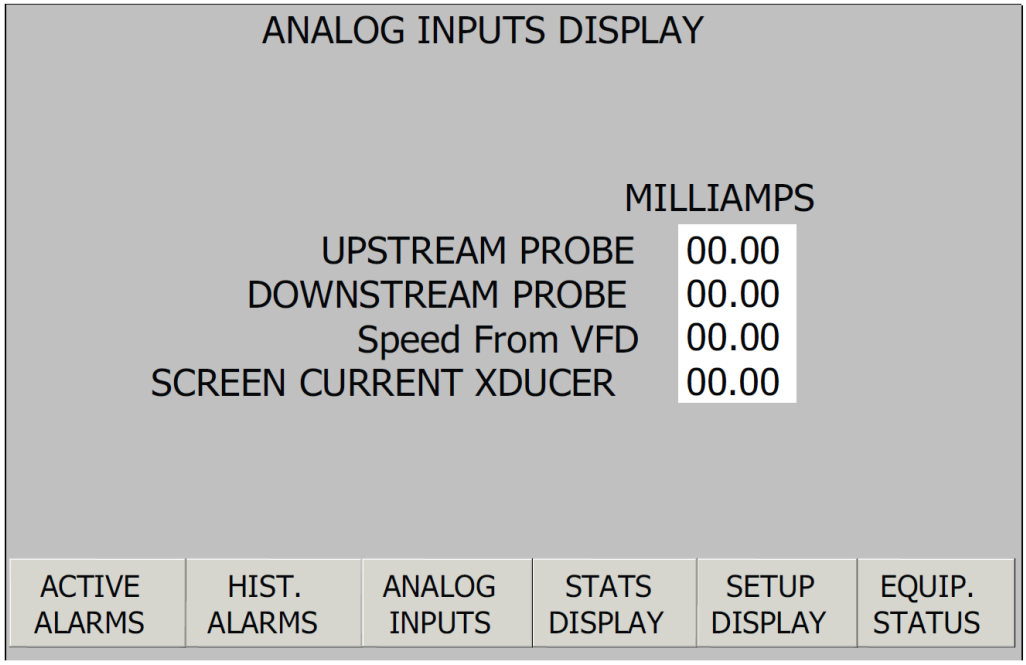

Figure 6.3.7-4 – Fine Panel Equipment Analog Inputs Display

Screen Statistics Screen

The "Stats" screen displays the screen run time, number of motor overloads, the number of motor over-temperatures and the number of screens jams that have occurred. The screen statistics diagram is shown on ***Figure 6.3.7-5***.

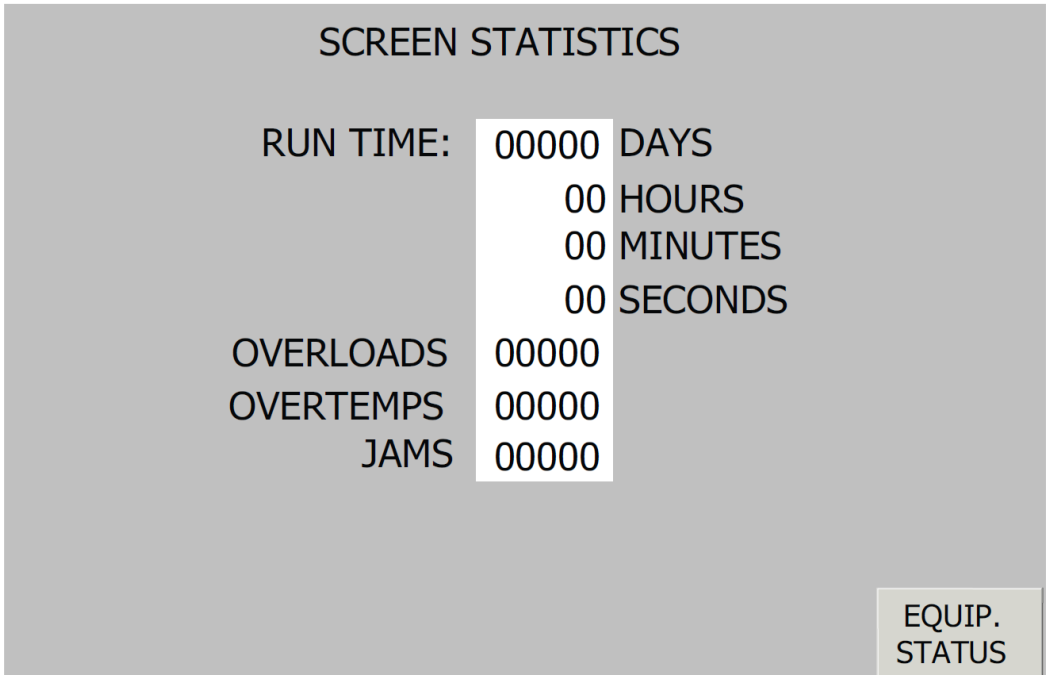

Figure 6.3.7-5 – Fine Panel Equipment Screen Statistics Screen

Equipment Setup Display Screens

The "Setup" screen is a password protected screen. The "Password Screen" (FIGURE 4-9) will appear first when "Setup" is pressed at the "Equipment Status" screen. The default password is "9999". The password screen is shown on ***Figure 6.3.7-6***.

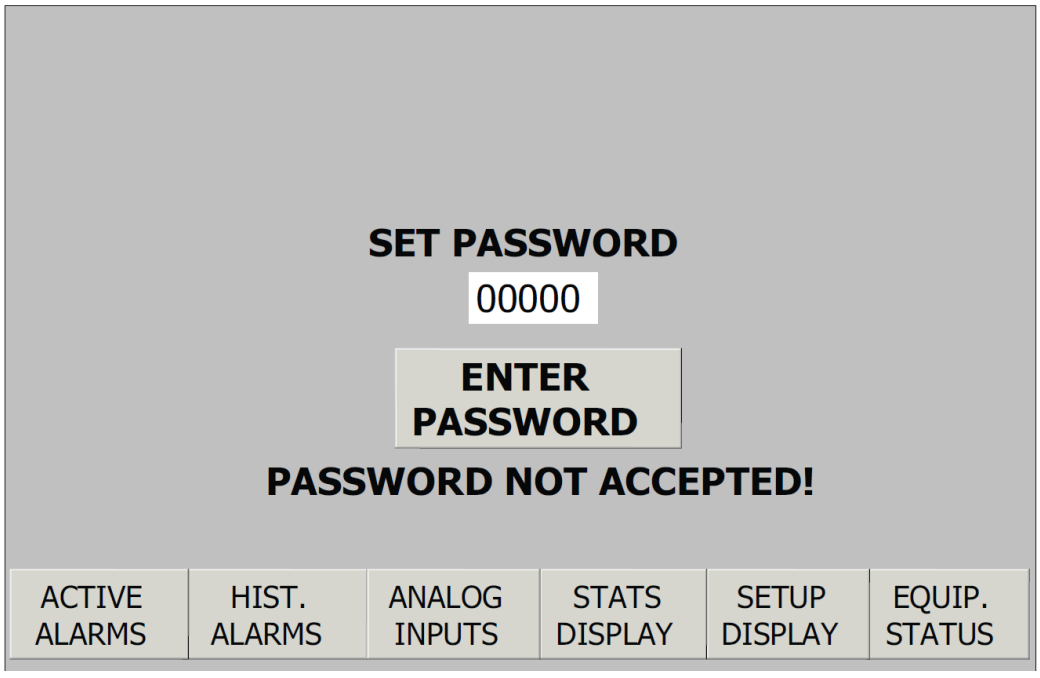

Figure 6.3.7-6 – Fine Panel Equipment Setup Screen #1

The first "Setup" screen appears once the correct password is entered. The following Screen operational functions are entered on this screen:

- Screen start differential level: ###.## (factory setpoint 0.66 ft.)
- Screen stop differential level: ###.## (factory setpoint 0.33 ft.)

- High level alarm setup: ###.## (factory setpoint 7 ft.)
- Screen run off delay: ### seconds (factory setting 120 seconds; time for Screen to rotate 1 to 2 revolutions)
- Backup timer: ### minutes (factory setting 30 minutes; initiates a Screen cycle if the differential and high level setpoints do not start the Screen before the timer times out)
- Backup timer cycle delay-off time: ### seconds (factory setting 120 seconds)
- Upstream level sensor 4 mA: ###.## (factory set point 9.00 ft.)
- Upstream level sensor 20 mA: ###.## (factory set point 1.00 ft.)
- Downstream level sensor 4 mA: ###.## (factory set point 9.00 ft.)
- Downstream level sensor 20 mA: ###.## (factory set point 1.00 ft.)
- D1: distance from the face of the upstream sensor to the channel bottom
- D2: distance from the face of the downstream sensor to the channel bottom

The equipment setup screen #1 is shown on ***Figure 6.3.7-7***.

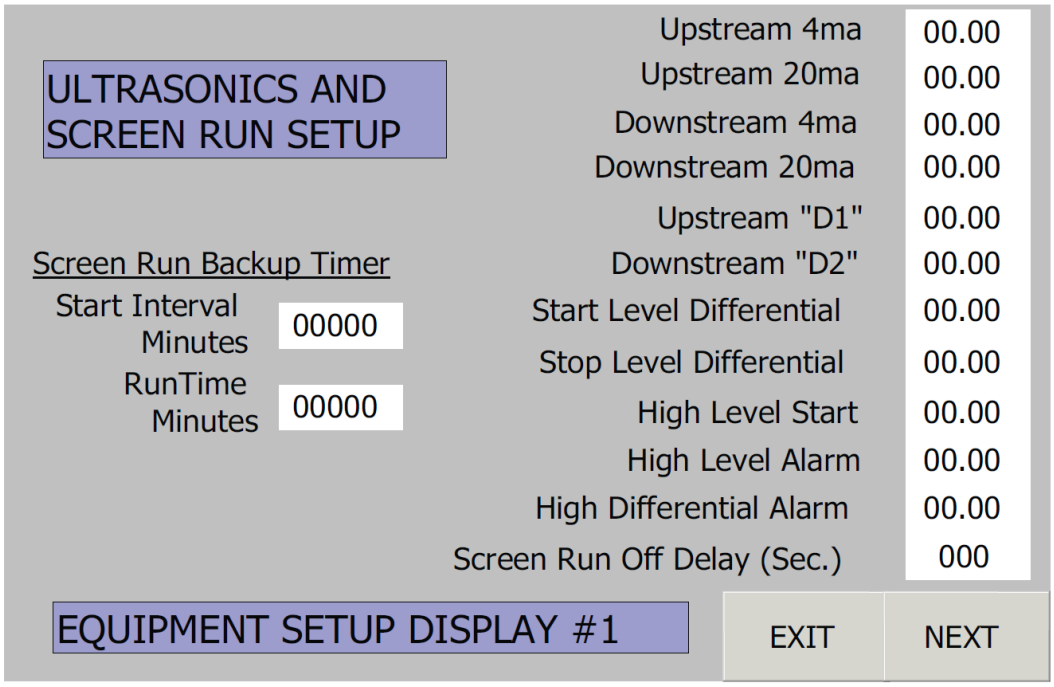

Figure 6.3.7-7 – Fine Panel Equipment Setup Screen #1

Press the "NEXT" box which accesses the "Current/Speed Transducer Setup" screen. The following setpoints are programmed from this screen:

- Screen jam
- Screen current maximum range
- VFD speed indication
- VFD speed setpoint

These values are factory set and should be only changed at the direction of JWCE Product Support. The equipment setup screen #2 is shown on ***Figure 6.3.7-8***.

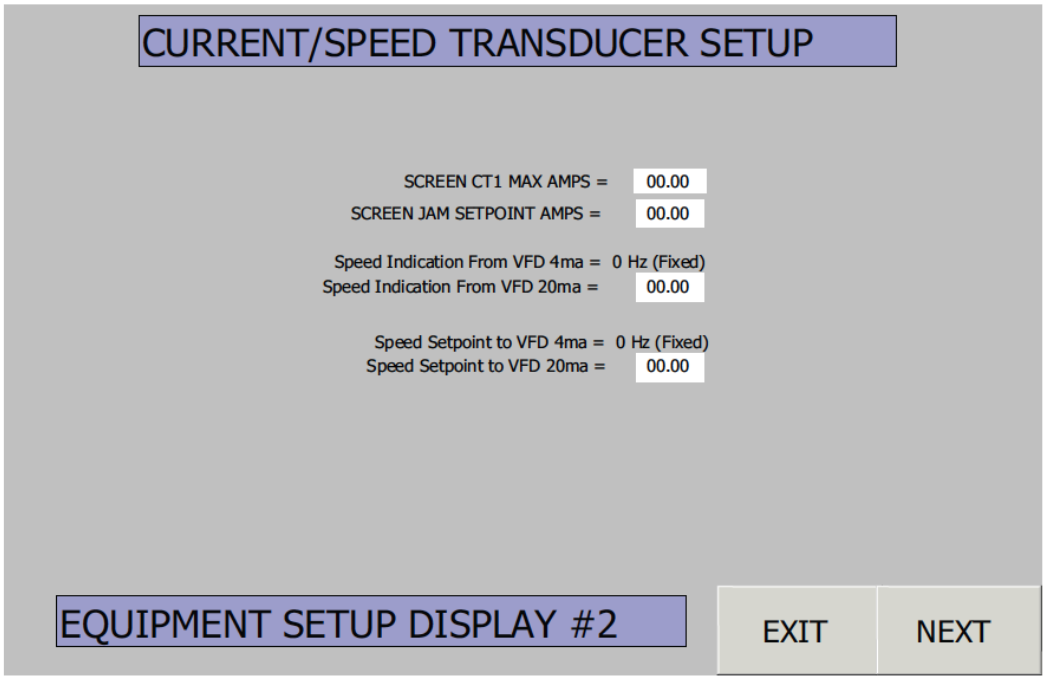

Figure 6.3.7-8 – Fine Panel Equipment Setup Screen #2

Four functions are or changes at the "Set PLC Clock" screen:

- Set PLC Clock
- Change Password
- Reset Statistics
- Select Operational Mode

The equipment setup screen #3 is shown on ***Figure 6.3.7-9***.

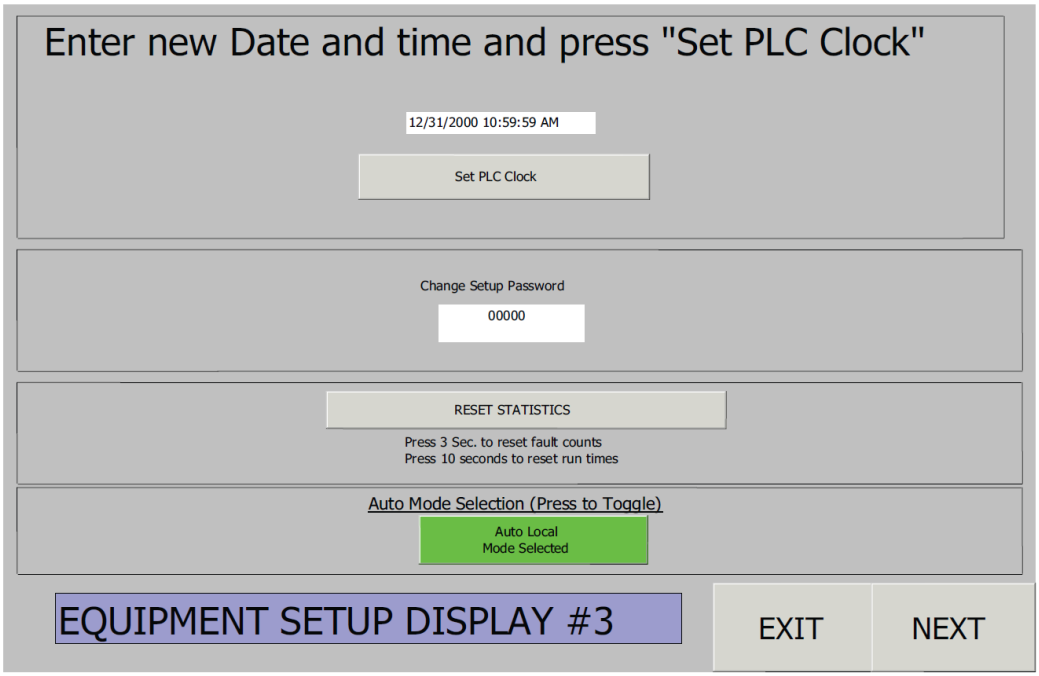

Figure 6.3.7-9 – Fine Panel Equipment Setup Screen #3

Power Recovery

If a primary power failure occurs when the following operational parameters are applicable, the Controller will reset itself when power is resumed. Normal operation will resume if the Screen was operating normally and the control switches are in the following positions:

- SCREEN HAND-OFF-REMOTE control switch is in HAND or REMOTE and SPRAY WASH ONOFF-
- AUTO control switch is in ON or AUTO.

Operation will not resume and the screen rotation will not be initiated if the screen was in a Fail condition prior to the power loss.